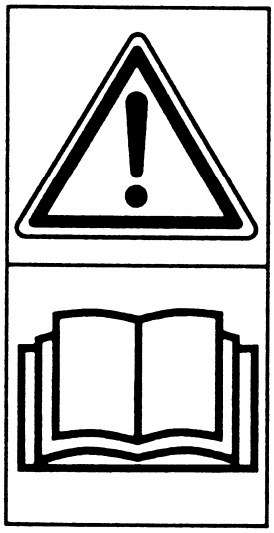
ARI-hetra™

HYDRAULIC PRESS
WITH DOUBLE-SPEED MANUAL PUMP

CE

ENGLISH

HDMP-33
HDMP-44
HDMP-55
HDMP-77
HDMP-110



INSTRUCTIONS FOR USE,
MAINTENANCE AND SPARE PARTS

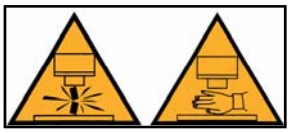
Before use, place the adhesive labels enclosed with this handbook on the press, as shown in the diagram below.

WARNING

FAILURE TO AFFIX THE LABELS WILL VOID THE GUARANTEE CONDITIONS AND RELIEVES ARI-HETRA OF ANY RESPONSIBILITY FOR DAMAGE RESULTING FROM USE OF THE PRESS.

If one or more press labels are damaged, lost or illegible, ask for a replacement by mentioning the relative position number.
Place the new label in the areas shown in the figure below.

1



2

4

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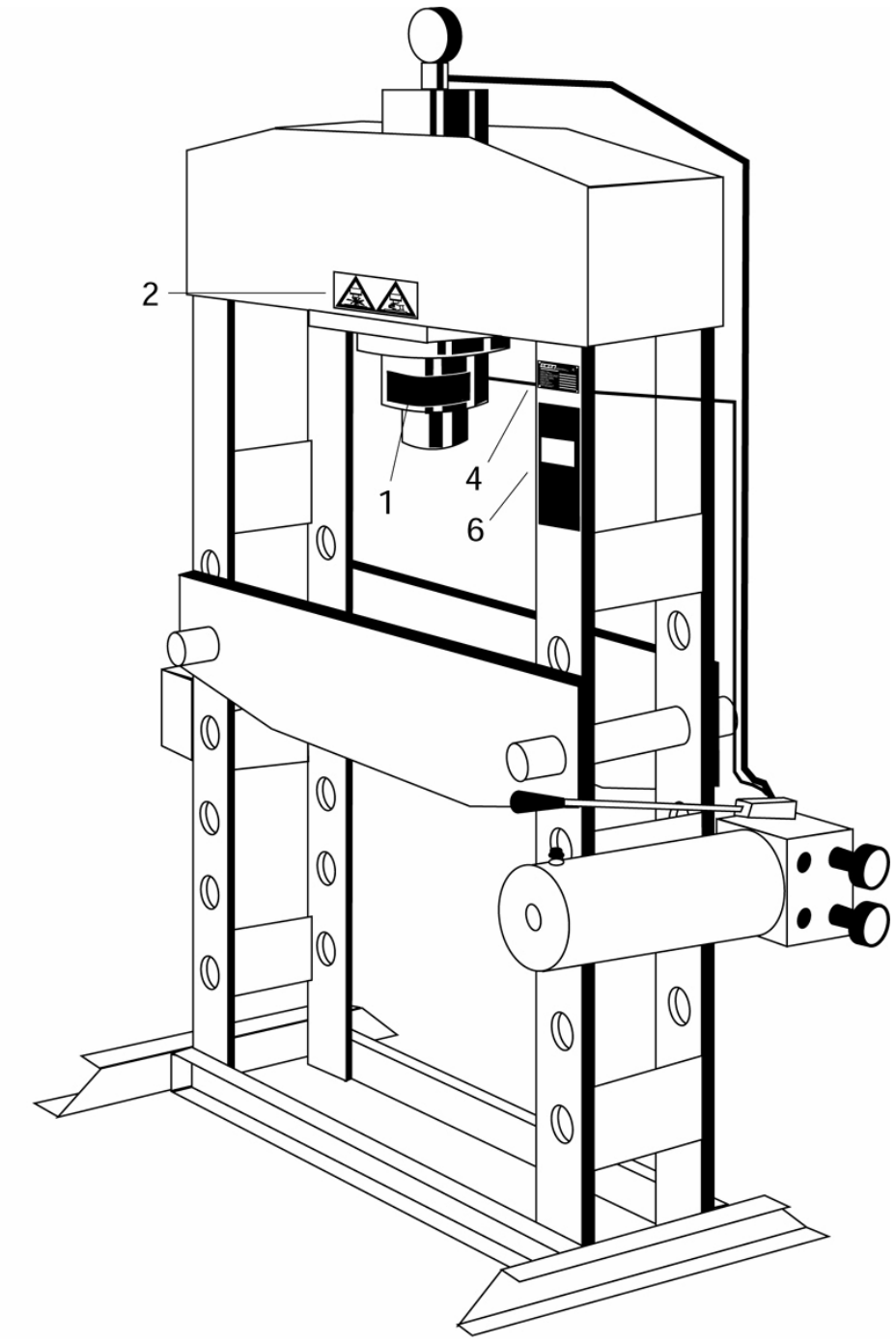

Pay attention to the following **hazard** signals when reading the manual:

DANGER

WARNING

CAUTION

These signals indicate the presence of more or less **hazardous** conditions or situations. The **HAZARD** signals are divided into three levels.

DANGER

Lack of compliance with this signal causes serious risks for health: death, permanent damages both short and long term.

WARNING

Lack of compliance with this signal causes serious risks for health: death, permanent damages both short and long term.

CAUTION

Lack of compliance with this signal can cause personal injuries or damage to the press.

TERMINOLOGY AND DEFINITIONS (Annex I, directive 98/37/CE)

- **"Operator":** the person (s) responsible for installing, starting up, adjusting, servicing, cleaning, repairing and transporting the press.
- **“Person at risk”:** anyone found entirely or partly in a hazardous area.
- **“Area at risk or hazardous”:** any area inside and/or near the press where the presence of a person at risk endangers his/her safety and health.
- **“Factory-trained technician”:** person assigned by ARI-HETRA to carry out special maintenance operations requiring training and specific skills in mechanics, electrical engineering, electronics, oil hydraulics and pneumatics.
  The Factory-trained technician is acquainted with all the possible hazards on the press and the necessary procedures in order to avoid injury to himself or others during these maintenance operations.
- **"User":** anyone who purchases or uses the press (e.g. for renting, leasing or under loan) in accordance with ARI-HETRA’s instructions.

User manual

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1.0 INTRODUCTION

This handbook contains all the necessary information for safely using, cleaning, lubricating and servicing oil hydraulic presses, manufactured by ARI-HETRA, 7251 Coppermine Drive, Manassas, VA 20109 USA
Carefully read the warnings and instructions found in this handbook as they provide important information on **SAFE USE and MAINTENANCE**.
This manual is an integral part of the product, so keep it in a safe place for the entire product life.
If this handbook is lost or damaged, ask for another copy from:
ARI-HETRA, 7251 Coppermine Drive, Manassas, VA 20109 USA

WARNING

ARI-HETRA. CANNOT BE HELD LIABLE FOR ANY DIRECT OR INDIRECT DAMAGE OR INJURY TO PERSONS, ANIMALS OR THINGS CAUSED BY THE FAILURE TO OBSERVE THE INSTRUCTIONS CONTAINED IN THIS HANDBOOK.

2.0 SPECIFIC USE

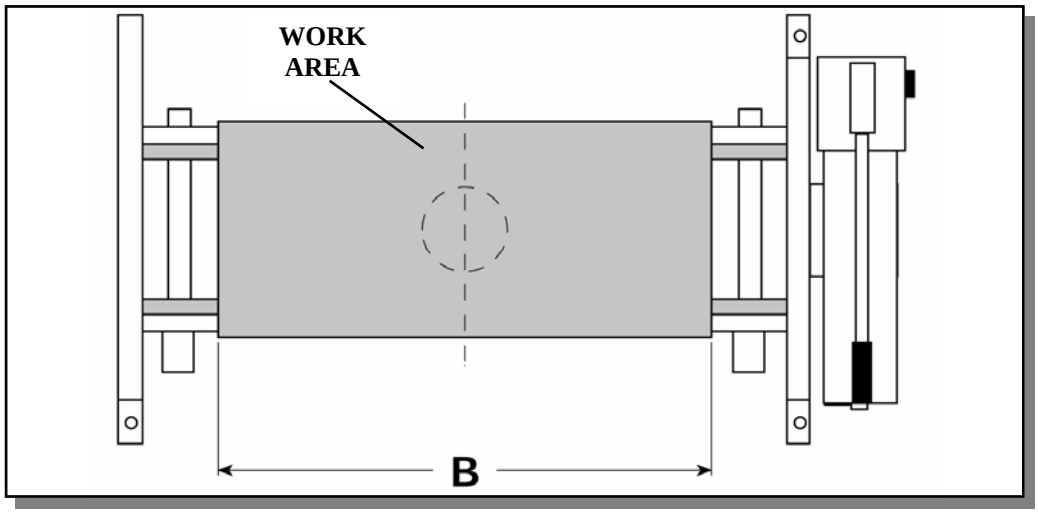
The press is designed to be used exclusively for maintenance and can therefore be used for servicing and/or making adjustments.
The press is not designed to carry out cyclic processing or quantity production and therefore should not be used for bending, drawing or cold forging metals.

WARNING

Uses not explicitly indicated in this handbook are considered improper and therefore strictly forbidden.
ARI-HETRA cannot be held liable for direct or indirect damage or injury to persons, animals or things caused by correct or incorrect use of the press.

2.1 Detail of workpiece Maximum sizes FIG. 1

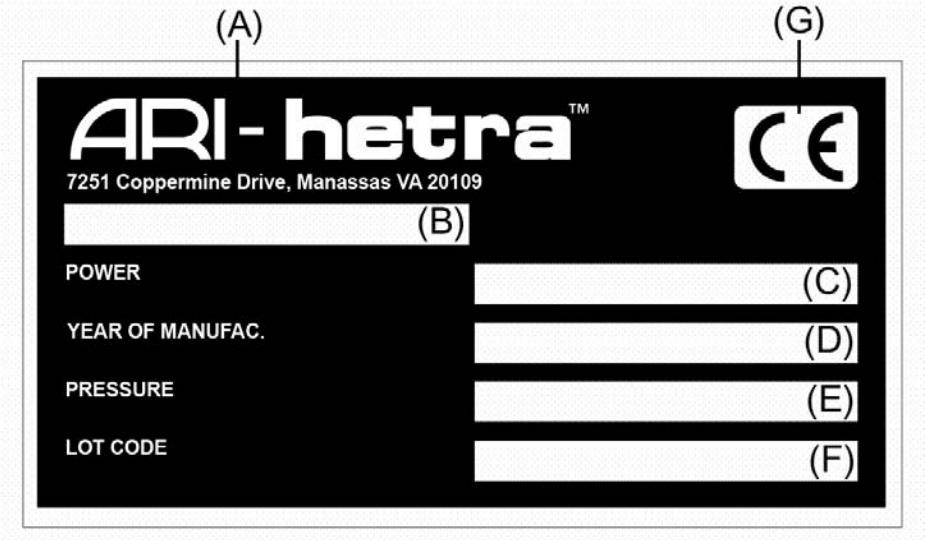
The maximum dimensions of parts must be obtained, please note the depth of the work surface, as the maximum distance within the platform opening and the width as the maximum distance between the side pillars. (dim. B FIG. 1)



DANGER

Avoid heavy strains when loading and unloading the parts manually.
Any heavy parts (weighing more than 55 lbs.) must be handled using the appropriate equipment (such as lifting devices, freight elevators or cranes).
Only one operator may carry out work on the press.

2.2 PRESS IDENTIFICATION



Every press has a name plate (POS. 4 Figure PAGE 2) showing the following information:

A) General data, manufacturer's complete address.
B) Model.
C) Power (thrust force in TONS).
D) Year of manufacture.
E) Operating pressure in PSI.
F) Manufacturing lot number.
G) CE mark.

2.3 EC CERTIFICATION

The press has been designed and built according to the provisions in directive 98/37/CE (machinery directive).
Before putting the press on the market, ARI-HETRA has compiled the technical file in annex V, ascertaining the press's compliance with the fundamental safety and health precautions contained in annex I of directive 98/37/CE.
To ensure that the press conforms with the fundamental safety precautions, ARI-HETRA has referred to and observed the following regulations:

REGULATION	YEAR	TITLE
EN 292-1	1992	**MACHINERY SAFETY:** Fundamental concepts, general design principles - Terminology, basic methods
EN 292-2	1992	**MACHINERY SAFETY:** Fundamental concepts, general design principals – Specifications and technical principles
EN 294	1992	**MACHINERY SAFETY:** Safe distances preventing access of upper limbs to hazardous areas
EN 349	1993	**MACHINERY SAFETY:** Minimum distances preventing crushing of body parts.
EN 414	1993	**MACHINERY SAFETY:** Design standards and presentation of safety regulations
EN 982	1996	**MACHINERY SAFETY:** Safety precautions for fluidic systems and components – Oil hydraulics
EN 1050	1997	**MACHINERY SAFETY:** Risk evaluation principles
EN 10025	1995	Hot rolled products of non-alloy steel for structural uses supply conditions.

ARI-HETRA has fulfilled the prescriptions of the above-mentioned provisions and has put the press on the EU market along with:

- User handbook
- CE mark
- CE compliance statement

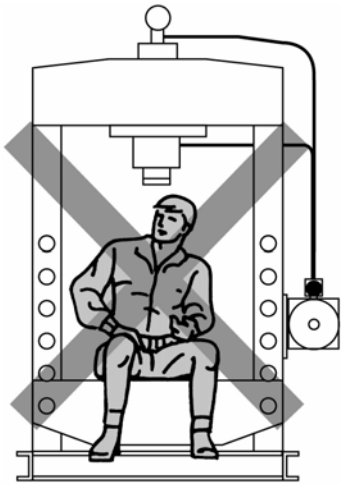
DANGER

STRICTLY OBSERVE THE GENERAL SAFETY AND ACCIDENT-PREVENTION REGULATIONS LISTED BELOW:

3.0 GENERAL SAFETY REGULATIONS

- **The press may only be used** by responsible staff in good health who have been specially trained to use the press and are acquainted with all the risks.
- **The press may only be used** by operators who have completely read, understood and taken in all the information given in this handbook.
- **It is required** to check that there are no persons at risk near the hazardous areas before starting the press.
- **It is forbidden to remove the guards or tamper with any of the safety devices fitted on the press.**
- **It is required** to check that the installed safety devices are in perfect working order before operating the press: **it is forbidden** to operate the press if it is faulty.
- **It is required** to fit the supporting pins of the work table before operating the press.
- **It is required** to check that there are no hazardous conditions for persons at risk during operation. If there are, stop any operations underway immediately and keep people away.
- **It is required** to check during the piston movements that there are no objects in area where the piece moved by the cylinder is projected.
- **<u>It is forbidden to climb or get onto the press (FIG. 1A).</u>**
- **It is forbidden** to stand near the press bed while the press is running.
- Should you notice any unusual sounds or operating faults, **It is required** to interrupt all operations immediately and find the cause of these irregularities. If in doubt, avoid improper operations and contact ARI-HETRA's technical service (ARI-HETRA).
- Any tampering or modification of the press automatically voids the guarantee and relieves ARI-HETRA from all and any responsibilities for direct or indirect damages caused by these tampering.
- **It is required** to make sure that the environment where the press is installed is well-ventilated and well-illuminated. The floor on which the press is to be installed must be solid, flat and perfectly level.
- During loading, unloading and installation **it is required** to use lifting and handling equipment with adequate capacity for the weight of the press (See FIG. 3 – TECHNICAL CHARACTERISTICS), using lifting devices and accessories (nylon belts, etc.) that are suitable and in perfect condition for the purpose.
- We suggest during the maintenance operation to use only ARI-HETRA original spare parts. ARI-HETRA declines any responsibilities for damages caused by the use of non original parts.
- The use of non original spare parts involves the automatic loss of guarantee.

FIG. 1A



3.1 Safety devices

The press is fitted with following safety devices:

- Maximum pressure valve which determines the maximum operating pressure of the press.
- Mechanical limit stop at the end of the stem's travel.

3.2 Clothing

To operate the press in safe conditions, wear appropriate clothing for the press and working environment:

- Do not wear long or flapping clothes, ties, scarves or similar garments that could get caught in the moving parts of the press.
- Keep long hair out of the way and sleeve ends tight; avoid wearing watches, rings, necklaces or other objects that can injure the wearer.
- Use suitable gloves and protective footwear. If the working environment has a noise level of at least 85 dB (A), wear ear muffs or other hearing protection devices.
- In every case, refer to the safety precautions regarding working environments of the country where the press is operated.

4.0 TRANSPORT

The press is supplied already packed in bubble wrap which protects it effectively during transport and handling.

The packaged press must be transported as follows:

- Protect the hydraulic pump (1 FIG. 2) from bad weather by covering it with nylon or equivalent material.
- Check that the corners on the ends are protected with appropriate materials (bubble wrap/cardboard).
- Do not use wire rope for lifting purposes.
- During lifting, sling the press with belts at least 39” long with a maximum capacity of over 3,300 lbs.
- Check that the bed is fastened securely without play between the bed and structure. Any play could be hazardous.

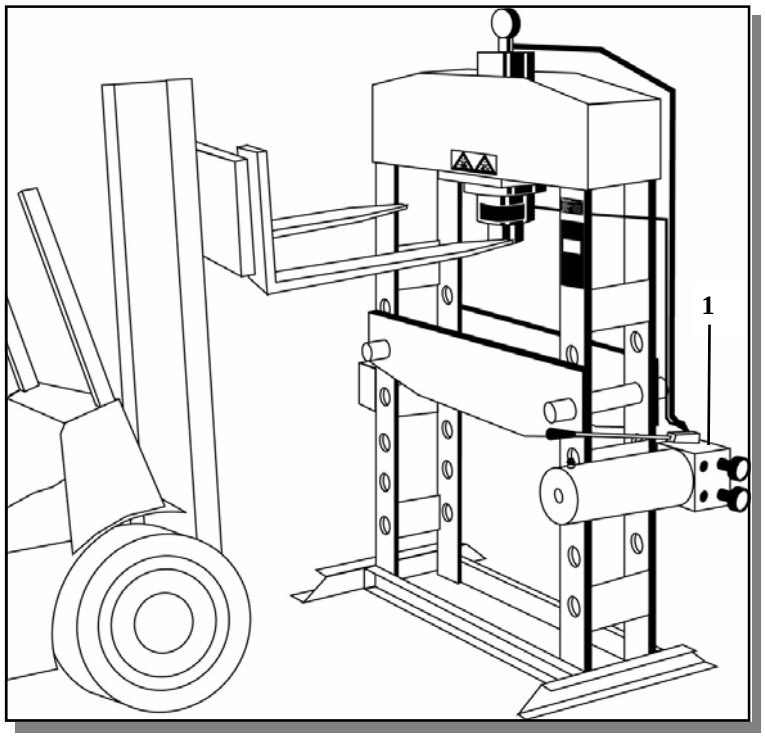
DANGER

USE FORK-LIFT TRUCKS TO MOVE THE PRESS, GRIPPING AND LIFTING IT AS SHOWN IN FIG. 2.

CAUTION

FIX THE PRESS SECURELY FOR TRANSPORT IN ORDER TO PREVENT IT FROM SHIFTING ON THE LOADING PLATFORM OF THE VEHICLE OR TRANSPORT EQUIPMENT.

FIG. 2



Model	Weight of package
HDMP-33	617 lbs.
HDMP-44	838 lbs.
HDMP-55	948 lbs.
HDMP-77	1,433 lbs.
HDMP-110	1,896 lbs.

5.0 UNPACKING

- After unpacking, check that the press and control equipment are perfectly intact and have not been damaged during transport. Notify ARI-HETRA of any missing parts within 8 days of delivery. If in doubt, do not use the press and contact ARI-HETRA.
- The packing elements are potential sources of hazards and must be kept out of reach of children. Dispose of them in special waste collection areas.
- The press is equipped with the pump drive rod and the pressure gauge as disconnected pieces. They are fastened to the inner spacers of the work bed through bands.
- The press is supplied with the tank already containing the necessary operating oil.

6.0 MAIN TECHNICAL FEATURES

- Press operated by a double-speed hydraulic pump. This system allows for a high speed in the approaching stage and a low speed during the working stage. The speed exchange is performed by the manual opening of a valve.
- Mechanical limit stops at the end of the cylinder movements.
- A maximum pressure valve that protects and monitors the hydraulic circuit.
- The maximum strain required to move the pump drive rod is lower than 90 lbs.

7.0 INSTALLATION AREA

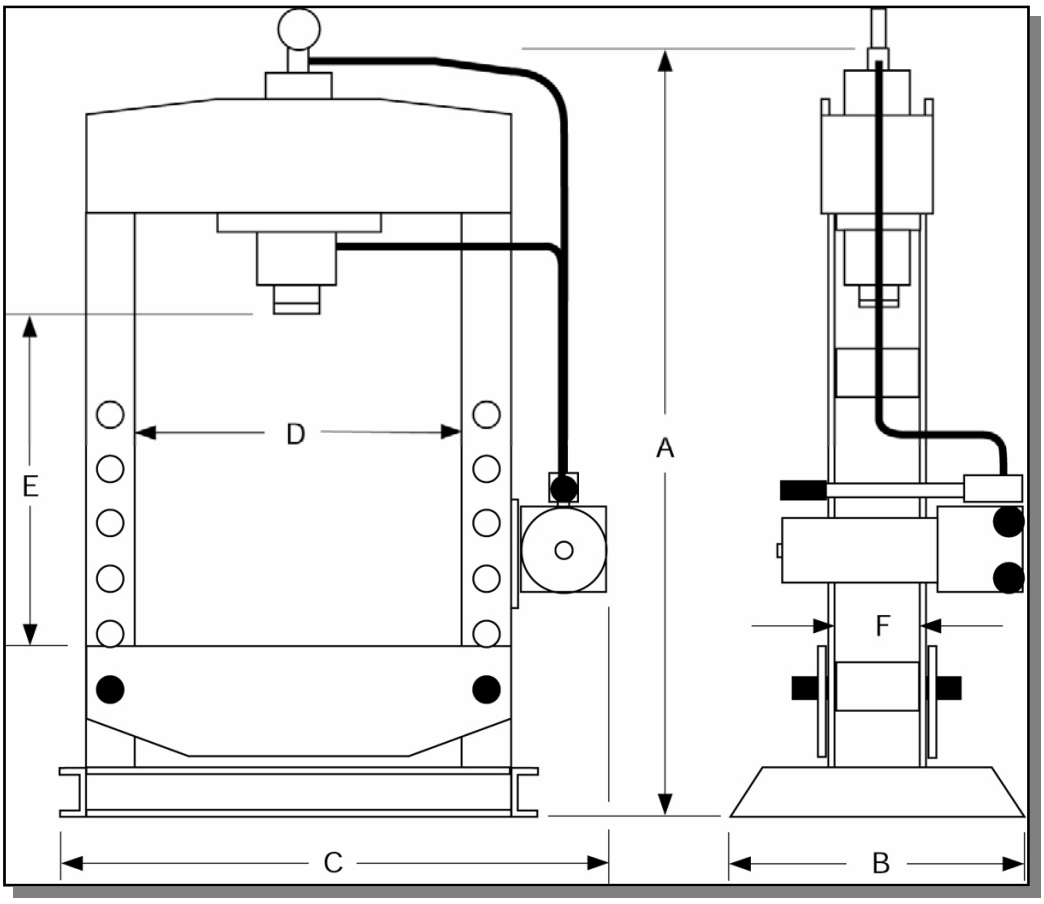
The press needs to be installed in a working area as indicated in the table (FIG. 3). The press must be positioned on a horizontal surface that is preferably cemented or

From the control point, the operator should be able to see all the equipment and surrounding area, to prevent any unauthorized persons or objects from causing hazards.

tiled. Avoid weak or unsteady surfaces. Any raised floors over empty spaces must have a resistance of 35 N/mm^2 equivalent to a class of 35 RcK.

The depth of the concrete layer must ensure a tight hold of the anchors and have a sound consistency of at least 6” with steel reinforcement.

FIG. 3

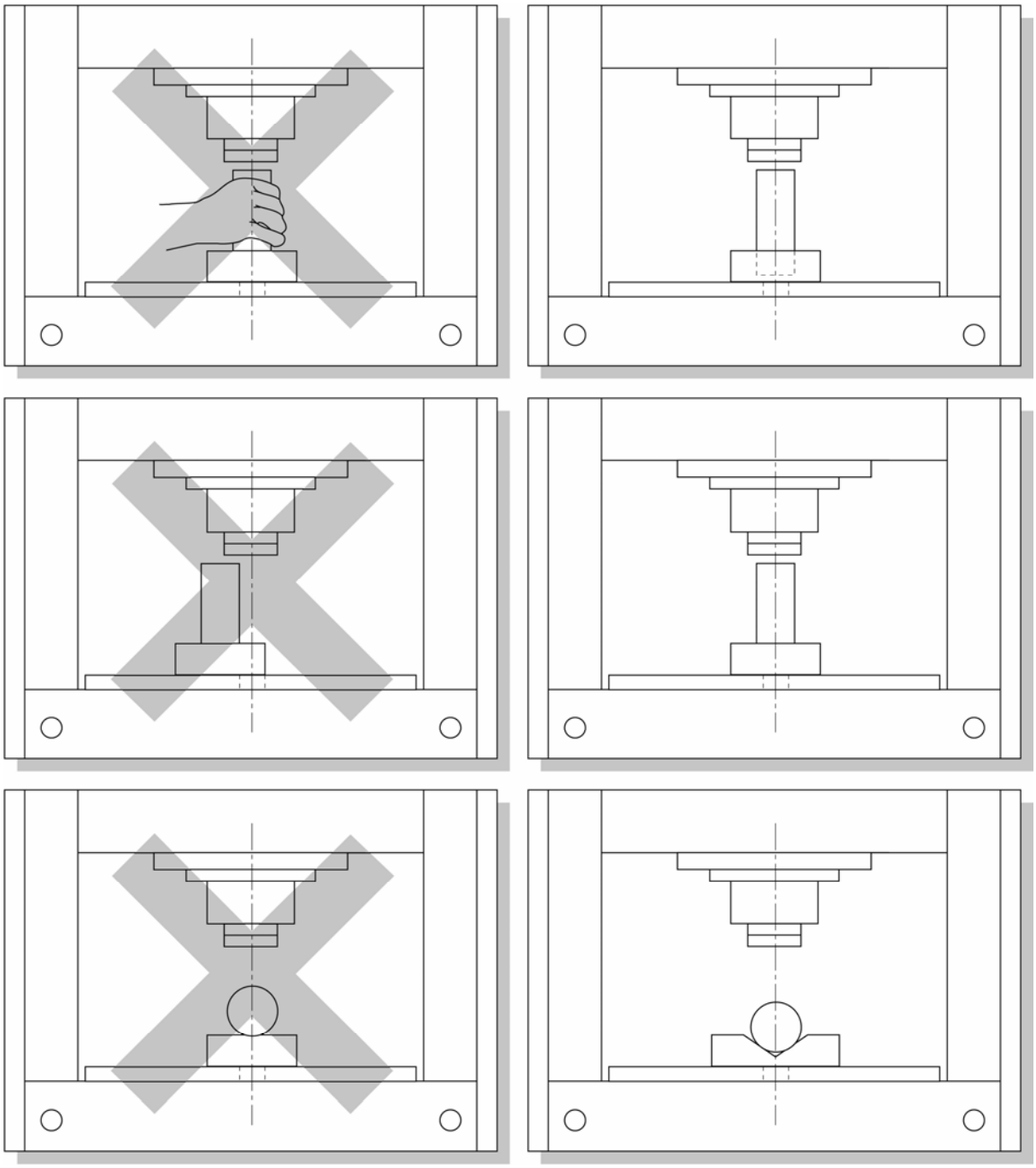


Technical specifications and weights refer to the standard and are not binding.

Model	Power	A	B	C	D	E	F	Ram stroke	Shipping Weight	Installation area
HDMP-33	33 Ton.	79”	24”	51”	28”	39”	7”	7.5”	617 lbs.	55” x 28”
HDMP-44	44 Ton.	83”	34”	56”	31”	45”	8”	7.5”	893 lbs.	63” x 35”
HDMP-55	55 Ton.	83”	34”	56”	31”	45”	8”	7.5”	981 lbs.	63” x 35”
HDMP-77	77 Ton.	88”	35”	62”	34”	45”	10”	8”	1,543 lbs.	67” x 39”
HDMP-110	110 Ton.	90”	35”	68”	40”	42”	11”	8.5”	2,117 lbs.	71” x 39”

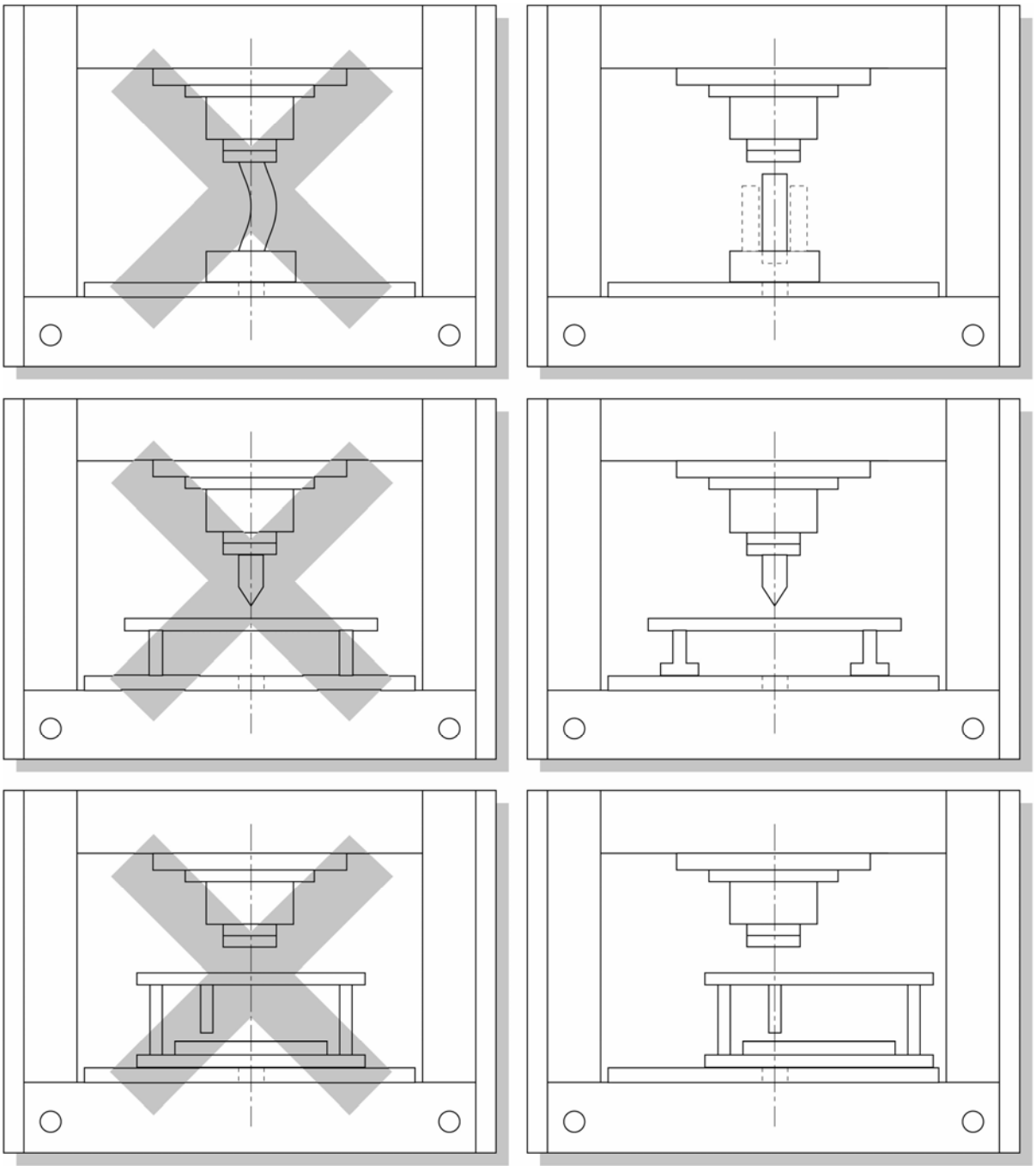
- 8.0 HOW TO USE -

- INCORRECT - **- CORRECT -**



- 8.0 HOW TO USE -

- INCORRECT - **- CORRECT -**



9.0 SETTING THE PRESS AT WORK

After unpacking the press components, check that the press and all its components are intact. Observe the following instructions in order to set the press at work.

A) Fit the anchors in their holes on the base.
B) Fix the press to the floor, tightening the anchor bolts (FIG. 4).

To carry out the operation, observe the following instructions (FIG. 4A):

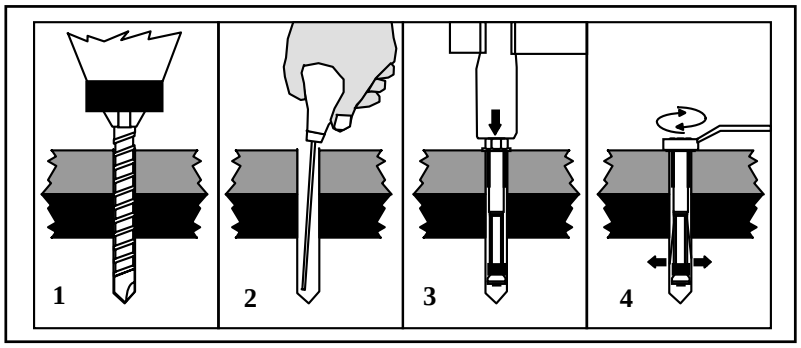
1) Drill at least 4” deep with an 18 ø tip. (1).
2) Clean the hole thoroughly (2).
3) Lightly hammer the anchors into the holes (3).
4) Tighten the bolts with a torque wrench calibrated to 50 ft/lb (4).

Check that the anchors are tight every 1000 working hours.

WARNING

ARI-HETRA cannot be held liable for any damage caused by the failure to follow the above instructions. Lack of compliance voids the guarantee.

FIG. 4A



C) Check the level of oil in the tank through the loading plug. For additions, use "TEXACO RANDO HD 22" or an equivalent type of oil.
D) Remove the plug (1 FIG. 5) from the delivery pipe fitting, and fit the special pressure gauge supplied with the equipment (2 FIG. 5).
E) Insert the pump drive rod into the crank of the pumping member.

FIG. 5

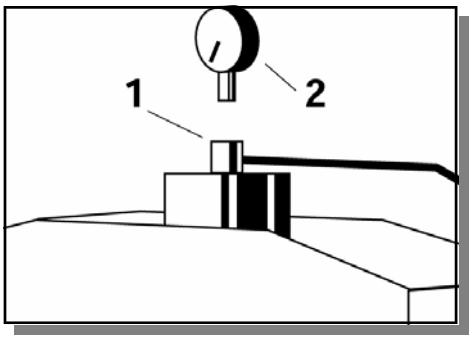
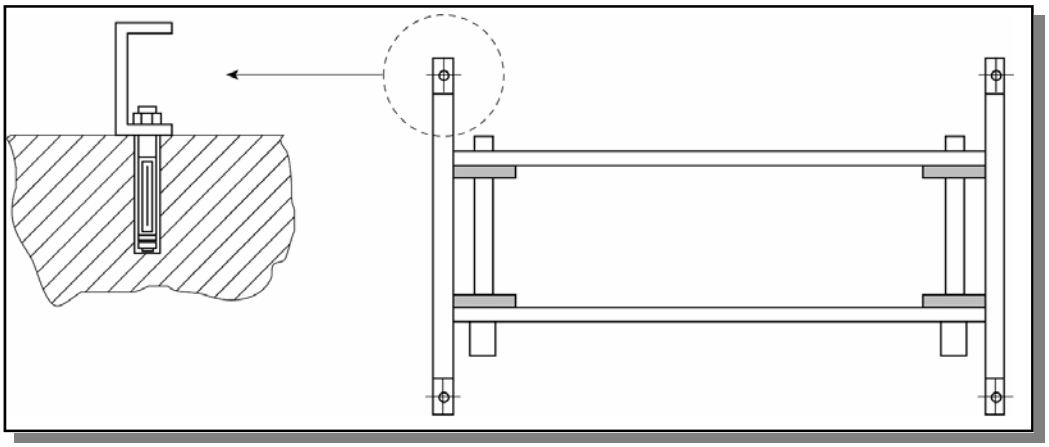


FIG. 4



10.0 USE

- The press may only be used by authorized, adequately trained, responsible and skilled staff in good health. Please remember that anybody who uses the press without being acquainted with the procedures specified here could seriously endanger persons at risk and the operator himself.
- The press operating system is of the "operator present" type. The various movement drives are immediately stopped when the controls are released.

Before using the press, the operator must have read, understood and taken in the instructions contained in this handbook.

WARNING

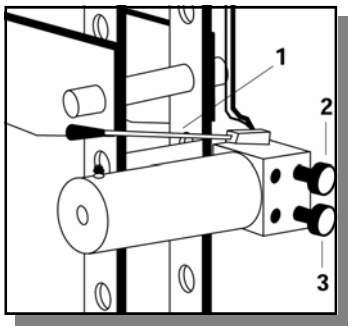
ARI-HETRA CANNOT BE HELD LIABLE FOR ANY DIRECT OR INDIRECT INJURY OR DAMAGE CAUSED BY THE FAILURE TO OBSERVE THE INSTRUCTIONS CONTAINED IN THIS HANDBOOK.

It is required to fit the work table supporting pins before operating the press.

10.1 Operation FIG. 6

WARNING

BEFORE CARRYING OUT ANY OPERATIONS ON THE PRESS, MAKE SURE YOU HAVE READ AND UNDERSTOOD ALL THE INSTRUCTIONS IN THIS HANDBOOK.



CYLINDER DOWNSTROKE:

Pull the pump lever (1 FIG. 6) with the hand - wheels (2 - 3 FIG. 6) closed. The cylinder stem moves at the maximum speed. During the pressing, open the hand - wheel (2 FIG. 6) to reduce the stem forward speed, and increase pressure.

CYLINDER UPSTROKE:

Open the hand - wheel (3 FIG. 6) to make the cylinder rise, then close it once the lifting is over.

WARNING

DO NOT KEEP ACTIVATING THE PISTON WHEN IT HAS COMPLETED ITS ASCENT AND DESCENT: YOU CAN RISK DAMAGING THE CYLINDER.

10.2 Adjustments

The maximum pressure valve (1 FIG. 7) is already set at the maximum value and does not require any intervention.
The work bed may be moved manually by adjusting the winch located on the left side of the press. Before moving the work bed, extract the two pivots that lock the bed.

WARNING

Before carrying out any operations, put the work table pins back in place.
Check that both surfaces of the bed are resting on the pins.

10.3 Working bed movement

The working bed movement can be obtained by adjusting the winch placed on the left side of the press.

WARNING

The working bed can be moved only when it is free of any accessory or tool installed or placed on the same bed.

- Act winch lever so that you lift the working plate in order to free the pins from the weight of the same working plate.
- Unthread the support pins from the working plate.
- Act winch in order to locate the working bed in the new desired position.
- Thread the pins as much as possible and make sure they protrude from the opposite side of the working bed.
- Lower the working bed by using the winch so that it rests on the support pins.

11.0 ROUTINE MAINTENANCE

Routine maintenance includes cleaning, lubricating, greasing and adjustments that need to be carried out at regular intervals in order to ensure that the press operates correctly and the safety devices are in perfect working order.
All those operations not mentioned below are considered extraordinary operations, which may only be carried out by ARI-HETRA.

WARNING

THE OPERATIONS DESCRIBED BELOW MUST BE CARRIED OUT BY TECHNICAL STAFF SPECIALIZED IN MECHANICS, ELECTRIC ENGINEERING AND OIL HYDRAULICS.

To ensure a correct and efficient operation of the press, please follow the instructions listed below, and perform all cleaning and routine maintenance operations once every 1000 working hours approximately.

Once every 1000 hours change the oil in the hydraulic unit's tank, using "TEXACO RANDO HD 22" or equivalent hydraulic oil.

To change oil, follow the procedure given below:

- Unscrew the plug (3 FIG. 7) located on the rear side of the tank.
- Separate the tank from the pump, collect the spilling oil, drain and clean the tank thoroughly.
- Replace the tank onto the pump and lock it with the relevant nut (3 FIG. 7).
- Fill the tank through the plug hole (2 FIG. 7) located on the tank top.
  The quantity of oil to be introduced varies as a function of the press model (see FIG. 8 for quantities) for the four items herein described.
- Use "TEXACO RANDO HD 22" or an equivalent type of oil.

Once every three oil changes (every 3000 working hours), the suction filters must be replaced. Replace the filters with the tank dismounted. The filters are shown in FIG. 10 pos. 36.

ALWAYS KEEP THE COMPONENTS OF THE PRESS PERFECTLY CLEAN.

FIG. 7

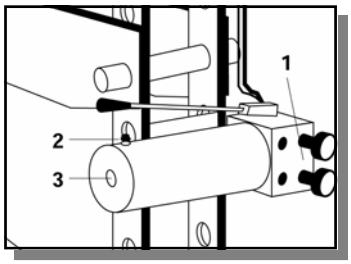


FIG. 8

Model	Oil quantity
HDMP-33	2.5 qt.
HDMP-44	4 qt.
HDMP-55	4 qt.
HDMP-77	9 qt.
HDMP-110	9.5 qt.

12.0 - TROUBLESHOOTING TABLE

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
The cylinder does not move when the pump is on.	1 The hand wheel for cylinder up-stroke is open. 2 Max. pressure valve failing or open. 3 Shortage of oil in the tank.	1 Tighten the cylinder return hand wheel. 2 Check the max. pressure valve spring. 3 Check the level of oil through the loading screw on the tank.
Pressure rises in bursts.	1 Air bubbles inside the cylinder or the pipes.	1 Make the cylinder stem perform a complete up - and downstroke.
Pressure does not reach the preset value.	1 Shortage of oil in the tank. 2 Leakage of oil through the circuit. 3 Max. pressure valve clogged up or broken. 4 Pumping unit worn out or failing to operate. 5 Cylinder gasket damaged.	1 Check that the level of oil is regular. 2 Check that no oil is leaking out of the pipe fittings. 3 Remove the max. pressure valve, clean it with compressed air and solvent, check the condition of the spring. 4 Extract the pumping member from the pump and inspect the gaskets. 5 Replace the cylinder or request help from Technical Service for gasket replacement.
Circuit pressure decreases too much during pump stop.	1 Impurities in the cylinder return valve ball. 2 Cylinder gasket damaged.	1 Completely unscrew the stem upstroke wheel. With the special sealing bush, remove the ball and the spring and clean the ball seat. 2 Replace the cylinder or request help from Technical Service for gasket replacement.

If the problem persists, contact ARI-HETRA and avoid unspecific operations.
Contact ARI-HETRA for assistance and ask for original parts.

The list of spare parts is enclosed with this instruction handbook.

13.0 SETTING THE PRESS ASIDE

- If the press is set aside for long periods, disconnect all supply sources, drain the tank of hydraulic oil and protect any parts that risk damage due to dust or atmospheric agents.
- The flexible tubes and components that risk damage due to drying out must be adequately greased.
- When setting the press at work after a long time, check that the flexible tubes are perfectly intact without cuts, scratches or cracks.

14.0 SCRAPPING THE PRESS

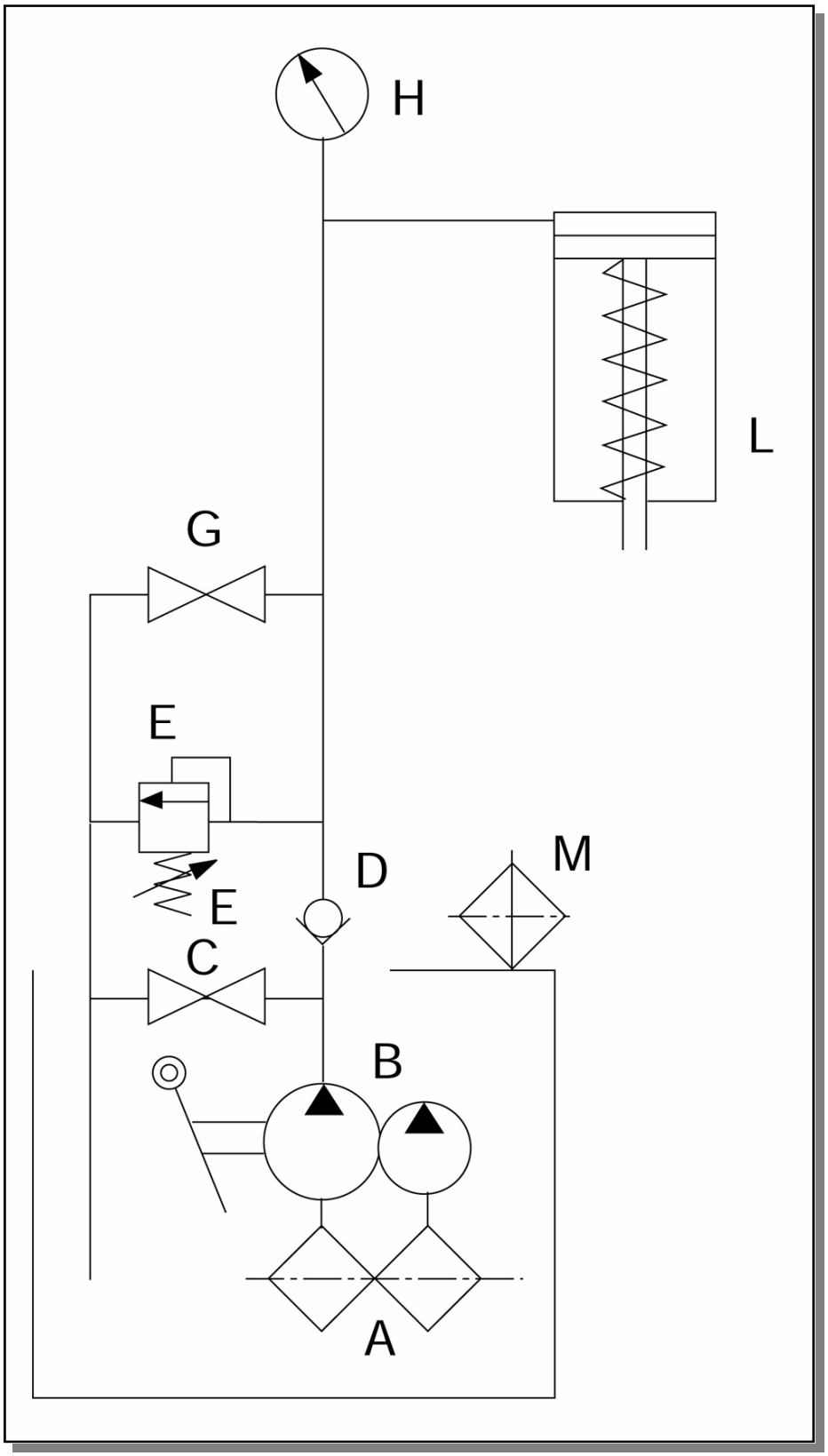
- At the end of the press's life cycle or when you decide not to use it any more, make it inoperative by removing all the hydraulic oil left in the tank and in the drive cylinder.
- The press must be disposed of as special waste, so dismantle it into homogeneous parts and dispose of them in compliance with the regulations in force.

15.0 FACTORY TESTS

Before packing, the press was subjected to operating tests regarding the parts listed below:

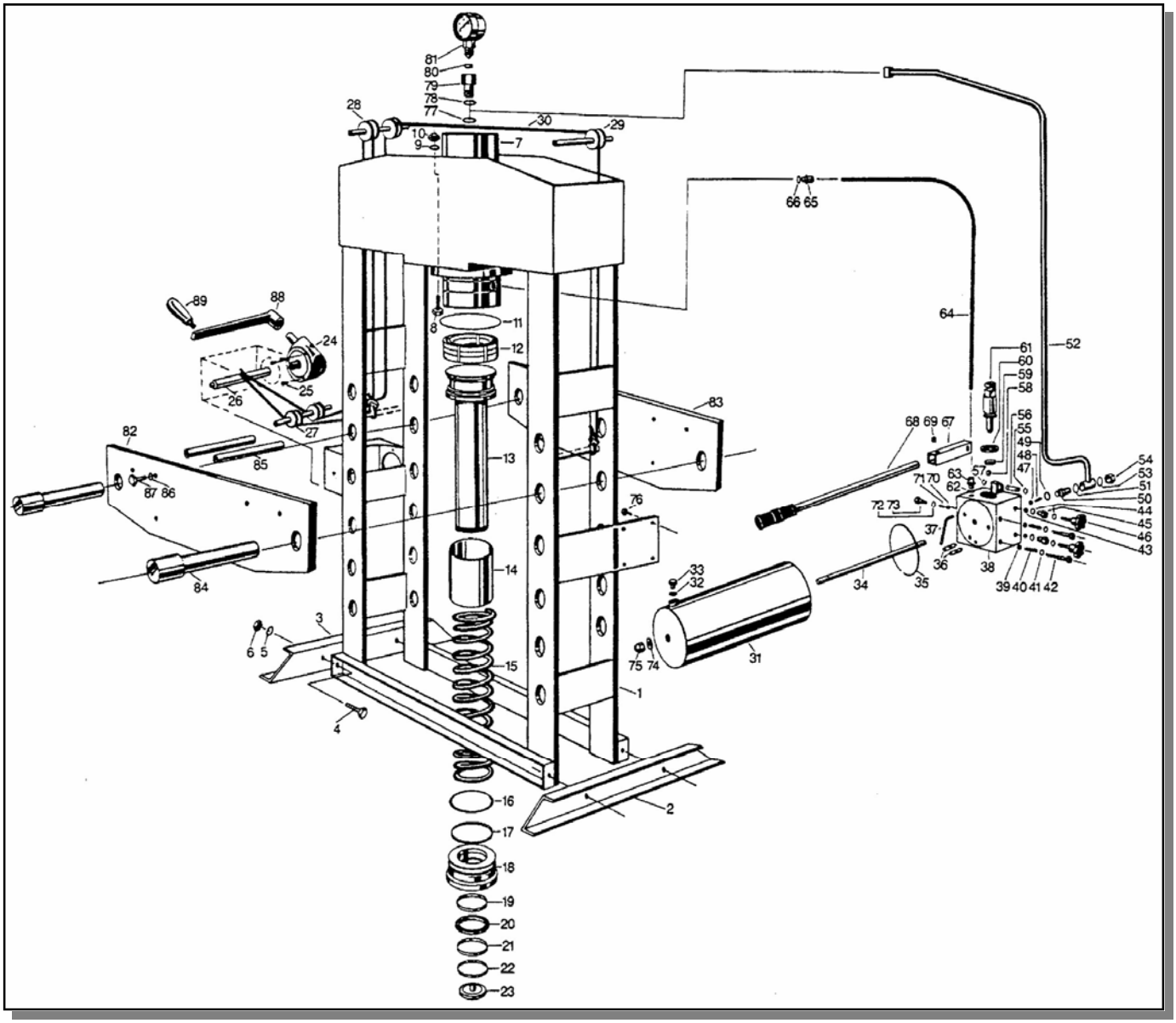
- Testing piston upstroke - downstroke.
- Checking that work bed and cylinder surface are parallel to one another.
- Testing work bed movements.
- Max. pressure valve tests and settings.
- Detection of possible leaks or losses from pipe fittings.

16.0
OIL HYDRAULIC DIAGRAM
FIG. 9



A	Filter
B	Manual pump
C	Slow speed valve
D	Check valve
E	Max. pressure valve 5,800 PSI
G	Stem return valve
H	Pressure gauge
L	Cylinder
M	Loading and drain plug

17.0
SPARE PARTS ASSEMBLY DIAGRAM
FIG. 10



List of components

1	Frame
2	Right foot
3	Left foot
4	Screw
5	Washer
6	Nut
7	Cylinder
8	Screw
9	Washer
10	Nut
11	O - Ring
12	DAS gasket
13	Stem
14	Spacer
15	Spring
16	O - Ring
17	Erosion-fighting ring for O-Ring
18	Guide flange
19	Guide ring
20	RS gasket
21	Guide ring
22	Dust scraper
23	Protection cap
24	Winch
25	Screws
26	Pivot
27	Pulleys
28	Pulleys
29	Pulleys
30	Metal cable
31	Tank
32	Copper packing
33	Drain valve
34	Union rod
35	O - Ring
36	Suction filters
37	Drain pipe
38	Pump body
39	Ball
40	Spring
41	O - Ring
42	Screw
43	Ball
44	Copper packing
45	Hand wheel nut
46	Hand wheel
47	Ball
48	Spring
49	O-Ring
50	Straight union
51	O-Ring
52	Down pipe
53	O-Ring
54	Nut
55	Snap ring
56	Pivot
57	Snap ring
58	Gasket
59	Gasket
60	Gasket
61	Piston
62	Copper packing
63	Straight union
64	Nylon pipe
65	Straight union
66	Copper packing
67	Crank
68	Lever (rod)
69	Grub screw
70	Ball
71	Spring
72	O-Ring
73	Screw
74	Copper packing
75	Nut
76	Screw
77	O-Ring
78	O-Ring
79	Straight union
80	Aluminium packing
81	Pressure gauge
82	Work crosspiece
83	Work crosspiece
84	Pin
85	Spacing pins
86	Washer
87	Screw
88	Crank
89	Handle
90	Ball
91	Spring
92	Screw

18.0 ACCESSORYS

In order to achieve better operation of the press, and increase safety and functionality to the use of the press, ARI-HETRA supplies extra equipment suitable to the different models presented in the manual.

The different equipment suitable for every model of press are reported in ARI-HETRA's brochures.

The specific instructions for the safe use of the equipment are supplied with the equipment itself and are not within this manual.

NOTES:

7251 Coppermine Drive
Manassas, VA 20109
USA
800-562-3250
TEL: (703)-359-6265
FAX: (703)-359-6405

INTERNET:
http:// www.ari-hetra.com
e-mail: webmaster@ari-hetra.com